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OFFICIAL ROUTING SLIP

TO	NAME AND ADDRESS	DATE	INITIALS
1	Chief, Plans and Programs Staff, OL		
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	ACTION		DIRECT REPLY		PREPARE REPLY
	APPROVAL		DISPATCH		RECOMMENDATION
	COMMENT		FILE		RETURN
	CONCURRENCE		INFORMATION		SIGNATURE

Remarks:

Attached are strategic plans for P&PD for the years FY-81 through FY-85. We attempted to abide by the D/L instruction regarding these plans; i.e., provide a brief statement of goals and more emphasis on ways to attain them. If you need any further information on this give me a call.

STATINTL

FOLD HERE TO RETURN TO SENDER			
FROM: NAME, ADDRESS AND PHONE NO.			DATE
STATINTL	Deputy Chief, P&PD/OL, Rm. 158 P&P Bldg. [redacted]		4Apr80
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STATINTL

1. It is most difficult to project with any amount of certainty the demands which may be thrust upon the Printing and Photography Division (P&PD) in the FY-81 through FY-85 period. Previous attempts to acquire some semblance of future printing, photographic, and graphic and visual requirements from our customers have been fruitless, as too many vagaries had entered the picture. From empirical data, however, we see a continuing trend toward an increase in publishing throughout the Agency and the need for photographic and visual material on an expanded scale, all with a demand for ever-constricting processing time.

2. Assuming that resources will remain static, we acknowledge the fact that the efficiency of P&PD operating branches and staffs must be elevated, not only to accommodate the demands of the future, but also to enhance our capability to meet the situation of short-deadline requests which we have with us at the present time. What we feel is the secret of any success which we may have in this endeavor is to link technological advancements with improved methods and procedures throughout the Division, casting an eye toward a total systems concept while looking at the very diversified operations as they now exist. In our judgment, this concept will allow us to avoid the pitfall of implementing technological or procedural improvements which may enhance the efficiency of one branch or staff operation but at the expense of creating a new and greater inefficiency in an associated operation.

3. The specific goals of P&PD through the referent years include: the upgrading of labor-intensive methods used in the distribution of documents from the Dissemination Section, Bindery Branch; the elevation of the Division's capability to create and update graphics and visual aids rapidly; the improvement upon existing means for the presentation of briefings for all Agency components; the reduction of the Division's dependency on silver-bearing photographic products; the improvement of communication links between P&PD and the Headquarters Building as well as to outlying facilities; and improvement in the overall quality of printed and photographic material and the shortened response times involved in their production. The three production cost centers in P&PD have been segregated below to show what P&PD has planned for each in an attempt to attain the aforementioned five-year goals.

a. Printing

Digitized Halftones

In order to print photographs in publications they must first be prepared through a process called halftone photography. Halftone photography converts continuous tone reflective copy, such as a photograph, into dots of various size by photographing the original through a fine line screen. This process is essential to printing as it permits the reproduction of varying tones on a printing press.

Through the use of a laser camera system, conventional time-consuming camera operations and expensive graphic arts film can be eliminated. The device scans the original copy, converts the image to digitized data, and electronically incorporates the desired fine line screen. The digitized halftone can be stored on a computer disk or magnetic tape. In an interactive electronic production system, stored digitized halftones will be integrated with the text from the P&PD ETECS typesetting system and transmitted through data links to a laser platemaker. The laser platemaker will then produce a finished printing plate containing both text and illustrations, properly assembled and positioned for the press run sequence. At present this technology has not reached practical application in P&PD but both its reality and potential benefits are expected within the forthcoming five-year time frame.

Color Scanner

In order to reproduce continuous tone full color pictures in the printed medium under the existing capability of P&PD, it is necessary to separate the picture into the three basic colors of red, blue, and yellow, plus black, which adds depth. These color separations are then broken into minute dots on a photographic negative through a process called halftone screening. A printing plate is made from the halftone negative and the color picture is reconstituted on paper by running the process color plates on a printing press. This traditional technique of breaking a color picture into the primary colors is both labor-intensive and time-consuming.

A direct color scanner is a device that will perform the color separation functions of the offset camera automatically and with a considerable savings in time. Color scanners utilize laser technology to scan the original image, break the image into its component colors, electronically "screen" the image, and produce process film negatives used to make press plates. Color scanners are available and are under consideration for use in P&PD in the Offset Photography Branch.

Color Scanner (continued)

While color process printing is currently accomplished as a separate camera operation from the text, it may become possible to incorporate the black process color image with ETECS-generated text directly in a laser platemaker, using electronic links to transfer the digitized image.

Laser Platemaker

Press plates are now produced by exposing a light sensitive printing plate to a light source through a prepared negative. The negative is produced using conventional photographic processes and assembly (imposed) into a printing format by offset strippers. This entire process (photography, imposition, and platemaking), can be accomplished by a single laser platemaking device. A laser platemaker scans the prelaid copy with a laser and transfers the image to a second laser, exposing the image onto a press plate held in the laser platemaker. The press plate, processed directly from the laser platemaker, is then ready for running on a press.

Laser platemakers are particularly attractive because they eliminate the need for silver-based photographic films, which have recently experienced quantum price increases. Laser platemakers also offer faster processing times (2-3 minutes from copy to plate) by eliminating camera, film processing, and stripping operations.

Current laser platemakers are designed to accommodate a newspaper-sized page format, too small for the commercial-size presses used by P&PD. Manufacturers have developed methodologies which allow presently available equipment to produce larger-sized plates. Laser platemakers designed for the commercial marketplace can be expected in two to three years.

Present laser platemaker systems read paste-up copy directly and produce a plate from the copy. New equipment, now being tested, can produce a plate from magnetic tape digital input. Future platemakers are being developed which will be electronically linked to a computer typesetter. This will allow pages to be made up on a keyboard terminal and transferred digitally to the laser platemaker.

Xerox 9700 Electronic Printing System

P&PD is currently in the process of evaluating the potential applications of the Xerox 9700. This equipment merges three technologies: digital computers, with their capacity for high speed handling of information; the high resolution imaging capabilities of lasers; and xerography's ability to produce quality printed output at high speeds. The 9700 can design and complete forms, change font styles, provide an abbreviated text composition capability, print on both sides of paper, and even print publication covers and

Xerox 9700 Electronic Printing System (continued)

place them in the correct collation sequence. The laser-operated image generator is driven by digital input, therefore, capable of becoming an output device for P&PD's ETEC system. The 9700 can be used as a proofing device, a semiautomated forms generator, or as a rapid response, stand-alone printing system. With the ever-increasing use of data links, the capabilities of the 9700 become even more interesting (as an interactive information handling system).

The Xerox Corporation is continuing to enhance the 9700's capabilities. Within the next five-year time frame, it may be able to print in color, digitize and reproduce continuous tone graphics, and efficiently replicate its initial output. ODP is using the 9700; the Commo APARS program will employ seven 9700's. Current planning in P&PD calls for the trial use of a 9700 to gain hands-on experience with the 9700 capability.

Bindery Branch Automation

Within the planned modernization of the Press Branch equipment, a new web offset press has become a reality. Its companion production piece, a device known as a gatherer-stitcher, automates the finishing aspect of printed matter generated by the web press. The gatherer-stitcher is, functionally, an item of binding equipment which has already produced a favorable impact on Bindery Branch operations. Its acquisition may represent the first step in updating the bindery function. Other equipment in this area is also in need of modernization to prevent the printing sequence from "bottlenecking" in this Branch.

Specifically, the dissemination of finished publications is a function in urgent need of automation to speed production, strengthen security aspects of this activity, and reduce a labor-intensive hand operation. The marketplace is being searched for hardware that will apply labels to packages, prepare courier receipts, and computerize the contents of 115 mailing lists containing about 1,600 addressees, which require almost daily updating. It is believed that an intermediate level of automation for this function is available; a longer term outlook suggests the possibility of interactive computer data links, from customer to Dissemination, which will allow the customer to update his mailing list data base.

b. Photography

Dicomed COM Recorder

The use of computer output microfilm (COM) has gained wide acceptance throughout the Agency as an information handling system. The requirements to place alphanumeric data on this form of computer output continues to increase, and surveys indicate that there has developed a demand for graphic illustrations that will complement the traditional textual data. P&PD's near-term plans include the acquisition of an advanced generation device, the Dicomed D148C System, which is capable of producing graphic illustrations in either color or black and white.

The D148C System, scheduled to replace an existing COM recorder, is a state-of-the-art device which can produce scientific graphic plotting, business graphics, simulations, and engineering illustrations. In using a high resolution color CRT and an appropriate optical assembly, this unit can generate 35mm color slides, color motion picture footage (animation), as well as the more conventional forms of microimagery. It also has the flexibility of being on-line to the ODP host computer software via data link, to the Zytron graphics generator, and can interface with ETECS to provide a more efficient microrepublishing capability. If acquired in FY-81, the Dicomed D148C System is expected to herald a new era in linked, automated information handling facilities.

c. Graphics

Zytron Graphics Generator

This device, just now entering the marketplace, has been trial tested by P&PD's Graphics and Visual Aids Staff for its application in generating graphic illustrations. In using a "smart" CRT terminal and appropriate, easy-to-use software, the operator can create and/or update graphic illustrations and briefing materials. In many respects, the Zytron package competes with OGCR's Genigraphics device, at a tenth of the cost, and will eliminate the use of an expensive external contract.

The Zytron system can accept data that is input via a keyboard, light pen, digitizing tablet, existing floppy disk files, or from a host computer data base such as ODP's IBM 360/370. The data that is input into the system is then used to create a bar chart, pie chart, line chart, stacked bar chart, or other illustration formats. The system also has a statistical analysis package which will allow the user to calculate and show a percentage of change when comparing one set of statistics with another.

A tablet is used to digitize various figures for creating a briefing aid. Almost anything from a cartoon character to a map can be digitized. When completed, the figures can be colored by using the commands on the keyboard. Text slides are created simply by inputting a string of text through the keyboard. The user, through commands, can then select type fonts and colors desired.

Output from the Zytron system through various hardware devices is 35mm slides in color or black and white, vugraphs, color Xerox, or photographic prints. The Zytron system can be directly interfaced with a Xerox color graphics printer which can then be used to create color Xerox prints. It can be interfaced with a Dunn camera to produce color Polaroid prints, vugraphs, or 35mm slides. It can also be interfaced to a graphics film recorder such as the Dicomed graphics COM recorder. Output from the Dicomed includes high-quality 35mm slides in color or black and white which can be converted into color prints or vugraphs and animated movies.

The Zytron system will provide P&PD with a greater capability to meet customer demands in terms of reducing response times and upgrading the quality of briefing materials. Ultimately it will become an integral part of the data link system proposed for automating the data flow of information handling.

4. The technological innovations listed above reflect P&PD's turn toward laser and electronic technologies for the answer to meeting the challenge of providing perishable intelligence in printing and photographic forms to all Agency components on a time-critical basis. We feel that it is just as important to also augment these technologies with sets of managerial controls, geared toward obtaining a handle on all aspects of the Division's operations for its responsible officers. Toward this end the following enhancements are planned to the existing Management Information System (MIS):

--- Upgrading of the printing and photography job management modules to include more detailed information relative to job costing and equipment loading.

--- Upgrading of the supply module to maximize efficiency in supply ordering, receiving, and issuances.

--- Upgrading of the VM-based Automated Copier Management System to allow the payment of bills from information retrieved from this data by the Office of Finance.

--- Enhancement of the P&PD Property Accounting System to allow for the more efficient updating of files pertinent to Agency property.

--- Development of a capability to store all P&PD maintenance and service contracts.

--- Development of a system with a capability to list all maintenance performed by P&PD personnel.

--- Development of a capability to store detailed P&PD budget data.

The aforementioned technological, methodological, and procedural advancements will be linked together to ensure a rise in the level of production throughout every element within P&PD.